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ABSTRACT

For years, an intuitively perceived X-factor seemed to help principals, professors, and supervisors announce with confidence those who were "really good teachers." This study attempted to point the way to gathering data objectively with regard to the X-factor. Two specific objectives were sought. The first one was to determine to what degree the following groups of people, involved with teachers in different capacities and roles, may be in agreement on the stronger/weaker "teachers" viewed: (a) selected 9th-grade students, (b) a 9th-grade class, (c) a senior high school class, (d) masters-level students in a graduate education course, (e) full-time teachers in a graduate education course, and (f) doctoral students and professors in education. A second objective was to determine if the evaluation of prospective teachers made by the group of five 9th-graders would correlate at a high level with the other groups and be reliable enough to serve as sufficient and representative in the evaluation process of prospective teachers. All six groups evaluated the videotaped performance of sophomores involved in a microteaching assignment. The results of the collected data showed significant correlations between evaluations made by five 9th-grade students and by students in both a 9th-grade class and a senior high school class from different schools within the same district. Low correlations were found between evaluations by the five 9th-graders and graduate students, public school teachers and professors. (JA)

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CAN THE X-FACTOR OF TEACHING BE USED IN RESEARCH?

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Introduction

Readers are familiar with the many studies of the past fifty years devoted to the characteristics associated with the "good" and "poor" teacher. A not unfair summary of all the studies is that the set of desirable characteristics is associated with all "good" people in any profession—they are the "best" doctors, lawyers, and preachers, as well as teachers. An intuitively perceived X-factor seems to help principals, professors and supervisors announce with confidence those who are "really good teachers." Such pronouncements are often given credence and respect in the real world, but seldom, if ever, are considered as valid data in designing research efforts.

For the past three years, New Mexico State University has provided public schools the opportunity to view a videotape of graduating candidates. Superintendents, directors of personnel and principals indicate high degrees of satisfaction with the tapes and report they can "tell much more about the candidate" by viewing such a five-minute tape than they can in the usual interview process. Indications are clear that the X-factor operates importantly in their viewing and selecting process.

Most of us who have worked with student teachers know the uncertainty of our evaluation of student teacher performance and uncomfortably admit (sometimes) that the X-factor has influenced our final assessment. Certainly, if performance-based teacher certification (PBTC) programs are to be valid, the gap between real world judgments and the limited range of decisions permitted by research must be bridged. In our view, objectively gained judgments will and must play a major role in any PBTC process.

In many traditional undergraduate education programs students first come into contact with pupils in public school classrooms as student teachers. When weaknesses are noted, it is almost always too late to remove them and often these weaknesses are associated with

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the X-factor which may or may not be subject to remediation. The trend toward more and earlier field experiences is probably one attempt to solve this problem. Such changes in formal teacher preparation programs offer controls not previously possible which should permit the X-factor to be subjected to respectable analysis and study. This paper reports such a pilot study.

At New Mexico State University, a new program in the sophomore block of courses is designed to give students both earlier field experiences and opportunities for self-evaluation through microteaching. These microteaching sessions are videotaped for every undergraduate teacher education student regardless of teaching field or level planned.

Purpose of the Study

The general purpose of this study was to point the way to gathering data objectively with regard to the X-factor. Several questions need to be answered regarding judgments obtained from viewing microteaching tapes: Do large groups achieve high correlations in judgments reported? How reliable are viewers in their reported judgments? What correlation exists for groups of differing education background, experience, age, philosophy? What problems will be encountered in such investigations? Can research design solve the problems within the constraints of reality?

In this pilot study, only two specific objectives were sought. The first one was to determine to what degree the following groups of people, involved with teachers in different capacities and roles, may be in agreement on the stronger/weaker "teachers" viewed. The groups were:

1. Five selected 9th grade students
2. A 9th grade class
3. A senior high school class
4. Masters-level students in a graduate education course
5. Full-time teachers in a graduate education course
6. Doctoral students and professors in education

A second objective was to determine if the evaluations of prospective teachers made by the group of five 9th graders would correlate at a high level with the other groups and be reliable enough to serve as sufficient and representative in the evaluation process of prospective teachers.

Procedures

During the Fall Semester, 1972, all students in the sophomore block had two microteaching assignments. The first was practice in the skill "Obtaining Attending Behavior." Most, if not all, students had no prior microteaching experience. All of the 108 students were videotaped as they incorporated the skill into lessons ranging between two and five minutes in length. Each "teacher" taught groups of peers ranging in size from three to five. These 108 microteaching sessions were saved on videotape and utilized in this study during the Fall Semester, 1973. A random forty minutes of the videotape was selected to be shown to the six groups. This forty minute tape included the lessons presented by thirteen of the students in the sophomore block.

The tape was first shown to a graduate class in Curriculum Foundations, made up almost equally of full-time masters-level graduate students (N = 12) and full-time public school classroom teachers (N = 13). They were asked to answer the following questions for each "prospective teacher" viewed: What are the chances for this person to become an effective teacher – good, marginal, or poor?" Prior to viewing, the three categories were discussed as follows:

Good = looks very strong

Marginal = could go either way, exhibits strengths and weaknesses about equally

Poor = looks very weak

We purposefully gave no further direction nor additional guidelines for evaluation with this group or any others.

Three doctoral-level students and two professors also followed the same viewing and evaluation processes. All five of these viewers were experienced teachers and three of the five had supervisory experience with student teachers. Permission was granted to show the forty minute videotape to two public school classes–one, a junior high school ninth grade civics class (N = 24), and the other a senior high school sociology class (N = 21).

The selected five ninth grade students were employed at $1.65 per hour to stay after school one hour a day, two days a week until they had viewed and evaluated all 108 videotapes. These five were recommended by the principal as a fair representation of the ninth graders in his school.

All students were asked to consider the question, "If you had your choice, would you want to be in this teacher's class?" Responses possible were "yes," "maybe," or "no." When an elementary school lesson was presented by a "teacher" on the tape, the viewers were told to consider the question from a younger person's view such as a brother and/or sister, or "Do you think this person would be a good teacher?" Again, no further guidelines were provided.

All of the data were gathered through these procedures under a grant (No. 3106-239) from the Educational Research Center of the College of Education, New Mexico State University.

Results

Ratings for each "teacher" were calculated for each group of evaluators by setting a good or yes rating = +1, marginal or maybe = 0, and poor or no = -1. The thirteen "teachers" were then ranked according to the ratings and Table 1 displays the rank-order correlation coefficients between the evaluations made by the five ninth grade students and the remaining groups.

Table 1

Correlations of Ratings by Five Ninth Graders
With Other Groups

Other Groups	Five Ninth Graders
Ninth Grade Class (N = 24)	.7954*
Senior High Class (N = 21)	.8723*
Masters Degree Students (N = 12)	.3352
Teachers (N = 13)	.4080
Doctoral Students and Professors (N = 5)	.3737

* Significant at, or beyond, .05.

As seen from Table 1, significant correlations were obtained between the five ninth graders and the ninth grade civics class as well as the five ninth graders and the senior high school class. It may be assumed that these student observers were seeing and valuing the same characteristics. On the other hand, the low correlation between the five ninth graders and the professional education groups indicates they were apparently seeing and valuing different characteristics.

Additional evaluations from larger groups may change the degrees of correlation, but the findings here clearly indicate that the five ninth graders are sufficient to obtain reliable assessments of prospective teachers from the viewpoint of the local junior and senior high school student. A study involving larger groups will be necessary to determine who may speak for teachers, graduate students and professors.

The following questions arise from this pilot study: Whose predictions of the "teacher's" performances are most accurate? Whose predictions are valid? Will there be a high correlation between predictions of the five ninth graders and the outcomes of "teachers" in student teaching or between other groups' predictions and the results of student teaching? What characteristics are being valued in making the evaluations? Will differences remain the same in evaluations by the ninth graders from those of professional educators when only elementary level lessons are viewed? Or only secondary level lessons are viewed?

A follow-up study during the student teaching of the 108 "teachers" evaluated by the five ninth graders will add valuable information. Similarly, a follow-up of these same "teachers" in their first year of teaching would be helpful. In general, the results of this pilot study clearly indicate the need and value of a large, tightly controlled examination of evaluations made by public school secondary students and those made by members of the profession.

Summary

This preliminary investigation of the perceived X-factor of teachers based on viewing two to five minute segments of microteaching tapes showed significant correlations between evaluations made by five ninth grade students and by students in both a ninth grade class and a senior high school class from different schools within the same district. Low

correlations were found between evaluations by the five ninth graders and graduate students, public school teachers and professors.

These results raise questions demanding answers, such as, whose evaluations are more valid—those of the public school secondary student or the professional educator, teacher, graduate student and professor? A full,well-designed, controlled study is needed early to (1) confirm or reject the indicated difference in judgment between the two groups, and (2) if confirmed, to gather follow-up data which may adequately or acceptably answer the question of which groups' judgment is valid, and (3) to open a new door for research regarding performance-based definitions of good and poor teachers based on objectively gained judgments of the X-factor in teaching.

Human judgments of teacher performance and effectiveness are inescapable in the real world. No competency-based program for assessing teacher effectiveness can ignore, or attempt to preclude, such judgments. Without consideration of such judgments, any connection between a PBTC program and true teacher effectiveness will be subject to serious question. This pilot study suggests one procedure for attacking the major problems of determining which judgments are valid.